

What is claimed is:

1. A thermally stabilized device, comprising:
 - a single signal port, which accepts an input signal and couples it to an input signal resistor;
 - a single power port, which accepts an input power signal and couples it to an input power resistor;
 - 5 a thermal linking agent operable to provide a low-loss thermal path between the input signal resistor and the input power resistor, and
 - wherein the input power signal provided to the input power resistor operates to maintain a constant power dissipated within the thermally stabilized device.

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2. The thermally stabilized device of claim 1, wherein the input signal resistor is a dissipative network.
3. The thermally stabilized device of claim 1, wherein the input power resistor is a dissipative network.
4. The thermally stabilized device of claim 1, wherein the input power resistor and the input signal resistor are constructed on a common substrate.
5. The thermally stabilized device of claim 1, wherein the thermal linking agent is a thermal compound, a heat sink, a substrate, a physical contact connection, or any combination thereof.
6. The thermally stabilized device of claim 1, wherein the power dissipated in the input power resistor is equal to a constant power minus the power dissipated in the input signal resistor, where the constant power is greater than or equal to a maximum power expected to be dissipated by the input signal resistor.

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7. The thermally stabilized device of claim 1, wherein the input signal port may comprise any combination of AC and DC components, and the input power port may comprise any combination of AC and DC components.
8. The thermally stabilized device of claim 1, wherein the input signal resistor may comprise a plurality of signal resistors, and the input power resistor may comprise a plurality of power resistors.

9. A thermally stabilized device, comprising:

a plurality of signal ports which each accept an input signal of a plurality of input signals, with each input signal coupled to a corresponding input signal resistor of a plurality of input signal resistors;

5 a power port, which accepts an input power signal and couples it to a power resistor;

a thermal linking agent operable to provide a low loss thermal path between the plurality of input signal resistors and the power resistor, and

10 wherein the input power signal provided to the input power resistor operates to maintain a constant power dissipated within the thermally stabilized device.

10. The thermally stabilized device of claim 9, wherein any input signal resistor of the plurality of input signal resistors is a dissipative network.

11. The thermally stabilized device of claim 9, wherein the input power resistor is a dissipative network.

12. The thermally stabilized device of claim 9, wherein the input power resistor and the input signal resistors are constructed on a common substrate.

13. The thermally stabilized device of claim 9, wherein the thermal linking agent is a thermal compound, a heat sink, a substrate, a physical contact connection, or any combination thereof.

14. The thermally stabilized device of claim 9, wherein the power dissipated in the input power resistor is equal to a constant power minus a total power dissipated by the plurality of input signal resistors, where the constant power is greater than or equal to a maximum total power expected to be dissipated by the plurality of input signal resistors.

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15. The thermally stabilized device of claim 9, wherein any input signal port may comprise any combination of AC and DC components, and the input power port may comprise any combination of AC and DC components.
16. The thermally stabilized device of claim 9, wherein each input signal resistor may comprise a plurality of signal resistors, and the input power resistor may comprise a plurality of signal resistors.

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17. A thermally stabilized device, comprising:

a signal port, which accepts an input signal and couples it to an input signal resistor;

5 a plurality of power ports which each accept an input signal of a plurality of input power signals, with each input power signal coupled to a corresponding input power resistor of a plurality of input power resistors;

a thermal linking agent operable to provide a low-loss thermal path between the plurality of input power resistors and the input signal resistor, and

10 wherein the plurality of input power signals provided to the plurality of input power resistors operates to maintain a constant power dissipated within the thermally stabilized device.

18. The thermally stabilized device of claim 17, wherein the input signal resistor is a dissipative network.

19. The thermally stabilized device of claim 17, wherein each input power resistor is a dissipative network.

20. The thermally stabilized device of claim 17, wherein the plurality of input power resistors and the input signal resistor are constructed on a common substrate.

21. The thermally stabilized device of claim 17, wherein the thermal linking agent is a thermal compound, a heat sink, a substrate, a physical contact connection, or any combination thereof.

22. The thermally stabilized device of claim 17, wherein the total power dissipated in the plurality of input power resistors is equal to a constant power minus the power dissipated in the input signal resistor, where the constant power is greater than or equal to a maximum power expected to be dissipated by the input signal resistor.

23. The thermally stabilized device of claim 17, wherein the input signal port may comprise any combination of AC and DC components and the plurality of input power ports may comprise any combination of AC and DC components.

24. The thermally stabilized device of claim 17, wherein the input signal resistor may comprise a plurality of signal resistors and each input power resistor of the plurality of input power resistors may comprise a plurality of power resistors.

25. A thermally stabilized device, comprising:

a plurality of signal ports which each accept an input signal of a plurality of input signals, with each input signal coupled to a corresponding input signal resistor of a plurality of input signal resistors;

5 a plurality of power ports which each accept an input signal of a plurality of input power signals, with each input power signal coupled to a corresponding input power resistor of a plurality of input power resistors;

a thermal linking agent operable to provide a low-loss thermal path between the plurality of input signal resistors and the plurality of input power resistors, and

10 wherein the plurality of input power signals provided to the plurality of input power resistors operates to maintain a constant power dissipated within the thermally stabilized device.

26. The thermally stabilized device of claim 25, wherein an input signal resistor of the plurality of input signal resistors is a dissipative network.

27. The thermally stabilized device of claim 25, wherein an input power resistor of the plurality of input power resistors is a dissipative network.

28. The thermally stabilized device of claim 25, wherein the plurality of input power resistors and the plurality of input signal resistors are constructed on a common substrate.

29. The thermally stabilized device of claim 25, wherein the thermal linking agent is a thermal compound, a heat sink, a substrate, a physical contact connection, or any combination thereof.

30. The thermally stabilized device of claim 25, wherein the total power dissipated in the plurality of input power resistors is equal to a constant power minus a total power dissipated in the plurality of input signal resistors, where the constant power is greater than or equal to a maximum total power expected to be dissipated by the
5 plurality of input signal resistors.

31. The thermally stabilized device of claim 25, wherein the plurality of input signal ports may comprise any combination of AC and DC components, and the plurality of input power ports may comprise any combination of AC and DC components.

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32. The thermally stabilized device of claim 25, wherein each input signal resistor may comprise a plurality of signal resistors, and each input power resistor may comprise a plurality of power resistors.

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33. A method for maintaining a constant temperature for each of one or more input signal resistors of a thermally stabilized device, comprising:

determining a total input signal power dissipated in a totality of one or more signal resistors of the thermally stabilized device; and

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dissipating a total power in a totality of one or more input power resistors of the thermally stabilized device as determined by a power constant less the total input signal power.

34. The method of claim 33, wherein dissipating the total power further comprises:

one or more input power signals provided to corresponding ones of the one or more input power resistors.

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35. The method of claim 33, further comprising:

a thermal linking agent providing a low-loss thermal path between the one or more input signal resistors and the one or more input power resistors.

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